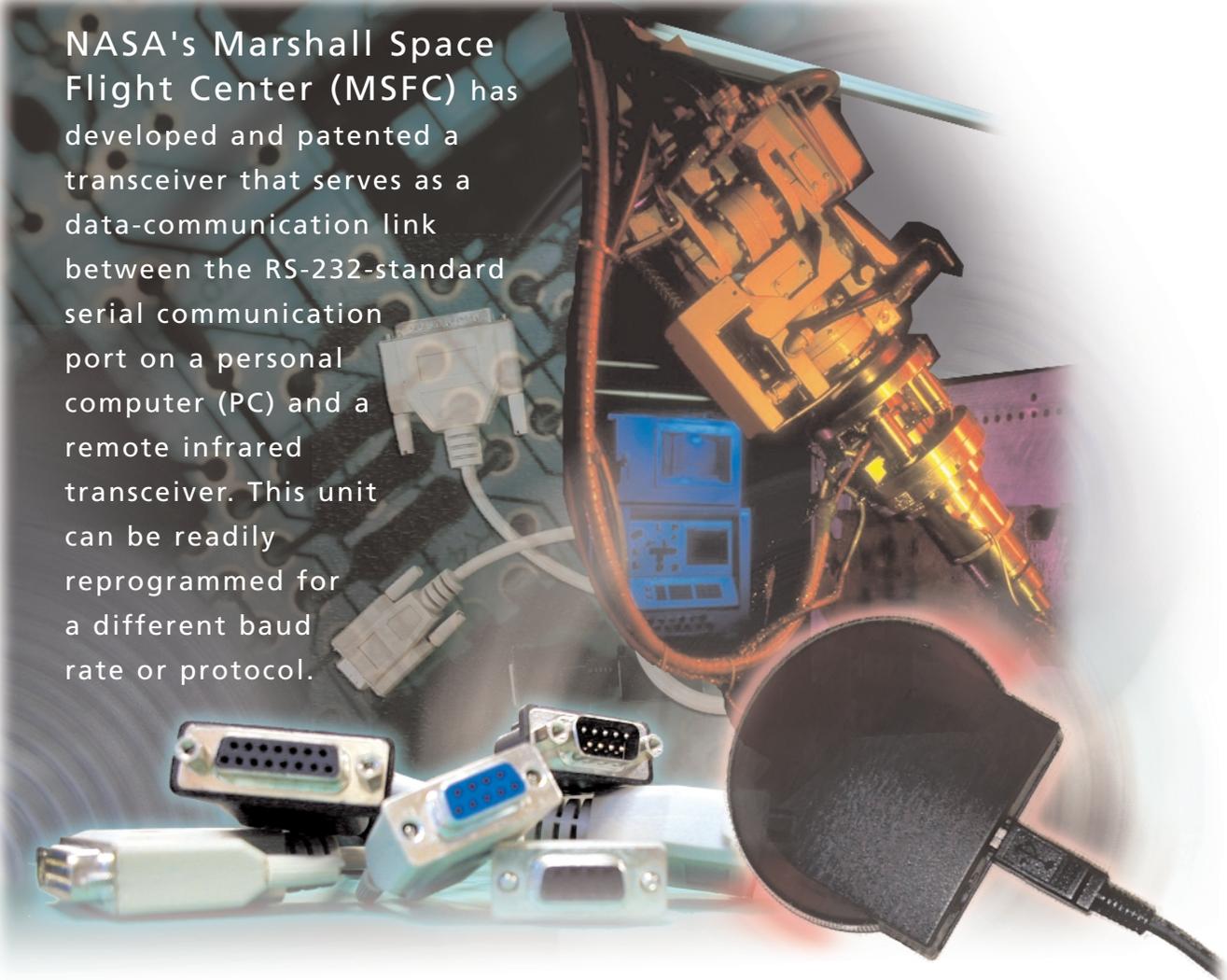


# Infrared Communication System



NASA's Marshall Space Flight Center (MSFC) has developed and patented a transceiver that serves as a data-communication link between the RS-232-standard serial communication port on a personal computer (PC) and a remote infrared transceiver. This unit can be readily reprogrammed for a different baud rate or protocol.

## Benefits

- Uses commercial, off-the-shelf components
- Compact hardware suitable for applications with limited space for equipment
- Flexible functionality: standard baud rates at the PC and up to 4 MHz at the IR transceiver; variable data block size
- Very small overhead protocol, very high data rates for small data packets. Allows small data packets (e.g., sensor data, etc.) to be transmitted fast and efficiently.

## Commercial Applications

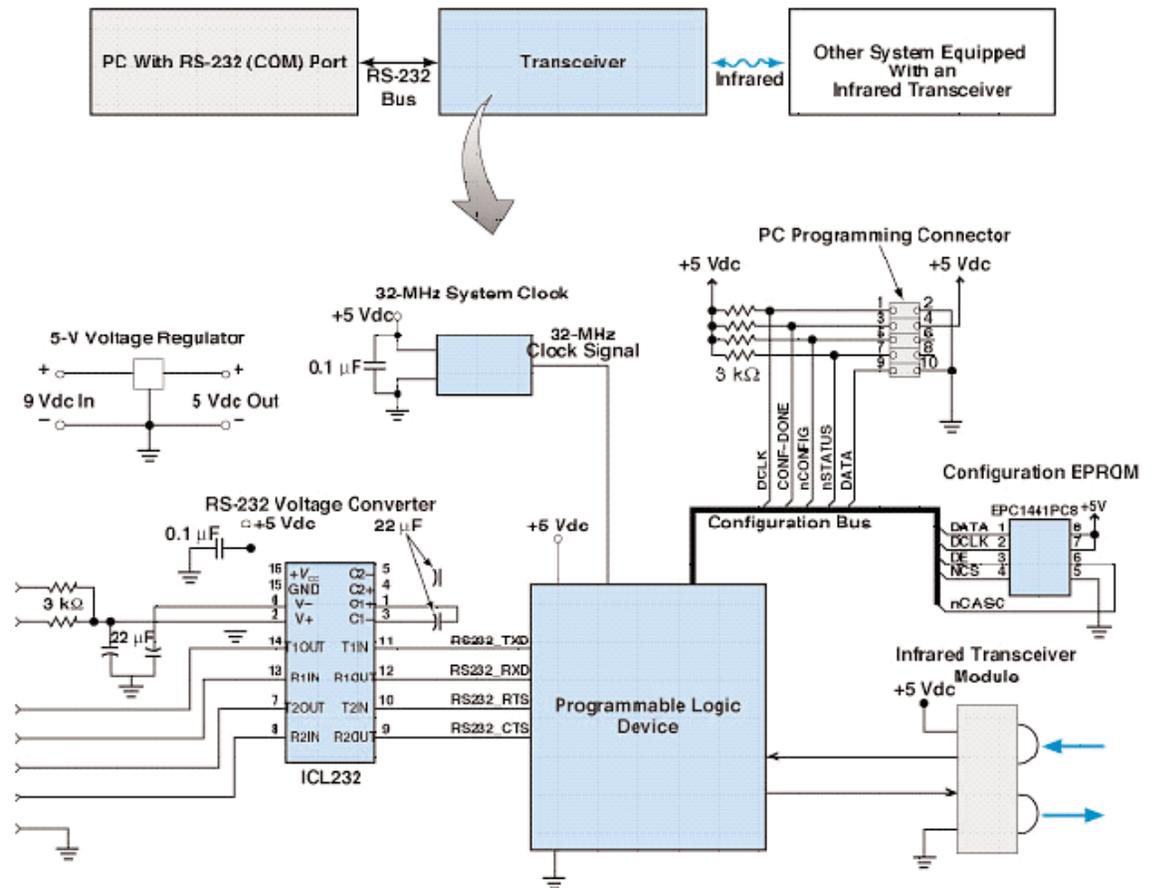
- Lab equipment interfaces
- Industrial controls interfaces
- Sensor communications
- Communications between moving components
- Wireless/infrared game controls
- Computer peripherals
- Remote controls



## The Technology

The MSFC transceiver was developed to serve as a data-communication link between the RS-232-standard serial communication port of a PC running Microsoft Windows and a remote infrared transceiver that can operate at a baud rate  $\leq 4$  MHz. The PC-to-transceiver communication is 115.2 kilobits per second, and the infrared communication is 4 megabits per second.

The transceiver includes a commercial, off-the-shelf infrared transceiver module designed according to Infrared Data Association (IrDA) standards, which were developed to promote compatibility among infrared networks for television receivers, computers, and other household devices. The original application for the transceiver requires small physical size and the flexibility to change the PC baud rate and the sizes of transmitted data blocks. To satisfy these requirements, a programmable logic device (PLD) is included and is programmed with VHDL (very-high-speed, integrated-circuit hardware description language) to implement the data link protocol between the RS-232 and 4Mbit/s infrared transceiver.



The RS-232-to-infrared transceiver converts serial data streams between an RS-232 electronic transmission medium and protocol and an infrared transmission medium and protocol.

## For More Information

If you would like more information about this technology or about NASA's technology transfer program, please contact:

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## Partnership Opportunities

This technology is part of NASA's technology transfer program, which seeks to stimulate commercial use of NASA developed technology. This technology has been patented (US 6,507,425) and companies are invited to explore licensing the technology. NASA is flexible in its agreements—opportunities exist for exclusive, nonexclusive, or exclusive field-of-use patent licensing.